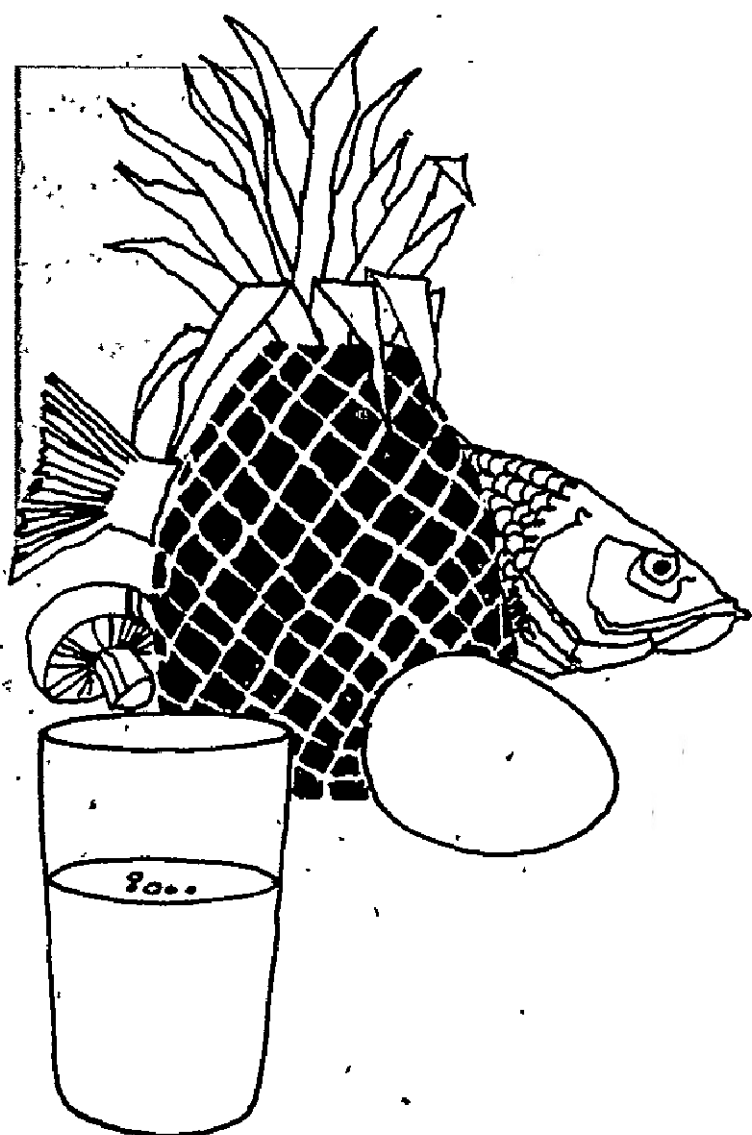


Summary of A.I.D.'s Nutrition Programs

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Introduction

Malnutrition is now recognized world-wide as one of the basic deterrents to over-all development. It is estimated that perhaps 500 million to a billion people are economically less productive than they might be and living marginal existences due in large part to nutrition-related problems.

While many of the developing countries' nutrition problems can be traced to fundamental socio-economic inequities, the amelioration of the nutritional consequences of these conditions need not await basic social change. A.I.D.'s nutrition strategy is designed to increase the abilities of the less-developed countries (LDCs) to:

- Analyze the nature, causes and magnitude of their basic malnutrition problems;
- Determine the most productive, cost/effective and affordable ways to strike at the root causes of malnutrition recognizing that A.I.D. can not effect more equitable income distribution, improve land tenure policies, and modify other basic socio-economic problems;
- Plan, implement, monitor and evaluate nutrition programs.

The A.I.D. nutrition strategy emphasizes that combatting malnutrition requires a coordinated effort involving agriculture, health, education, family planning, food technology and industry as well as the incorporation of Food for Peace into such efforts. It focuses on alleviating malnutrition among the most vulnerable LDC groups, pre-school children and pregnant and lactating women. Its fundamental concern is with improving the quantity and quality of food available to low-income consumers both urban and rural.

Since malnutrition is concentrated among the poorest in low-income countries, properly targetted nutrition programs in effect represent a transfer of resource to or better utilization of existing resources by the poor majority. Improving the nutrition and thereby the health of LDC mothers and children promotes the fuller participation of women in the development process and helps assure the social and economic well-being of the future generations. A.I.D.'s nutrition program thus reflects both A.I.D. and Congressional concerns about meeting basic needs and improving the quality of life in the LCDs, especially for the poor majority.

Office of Nutrition Programs

Since its inception almost 15 years ago, the Office of Nutrition has undertaken research and instituted operational efforts to combat the various factors contributing to malnutrition world-wide. A chronological listing of its projects follows:

A. Research

1964-68 New Processing Technology for Oilseed Proteins — Agricultural Research Service/USDA, under PASA contractual arrangement: Development of soybean and cottonseed processing technologies to permit industrial and village-level use for supplementing protein intakes.

1965-68 Evaluation of High-Protein Supplements in Child-Feeding Programs — National Institutes of Health/U. S. Public Health Service (Philippines). Field tests of soy grits and soy flour made available by USDA for P.L. 480 child feeding programs. (These products were later incorporated into the Food for Peace distribution program.)

1966-67 Influence of Early Nutrition on Cognitive Development in the Young Child — Cornell University (Peru): Testing under field conditions available methodology relevant to measuring the influence of early improved nutrition on cognitive development.

1966-68 Liver Disease and Nutrition — Harvard University (Uganda): Study at Makerere Medical School Hospital of relationship between local diets from various areas and liver disease. (No final report available).

1966-70 Extending Protein Concentrates for Child Feeding by Addition of Inexpensive Simple Nitrogen Sources — M.I.T./INCAP. Research into extension of dried milk protein with various inexpensive nitrogen sources, for use in LDCs. (931-17-560-458).

1966-75 Clinical Evaluation of New Protein Sources for Prevention of Malnutrition — British-American Hospital, (Lima, Peru): Determination of biological value to malnourished infants and children of new protein sources in blended foods, prior to distribution on a large scale. (931-17-560-459).

1967-70 Development of Soy-based Foods of High Nutritive Value (for Use in the Philippines) — Cornell University: Development of processes for manufacturing locally-acceptable foods and beverages from soybeans.

1967-75 Improving the nutritive value of cereal based foods — Kansas State University (Morocco and Pakistan): Improving nutritive value of cereal through the development of technologies for adding protein concentrates to improve diets of LDC populations without changing food processing. Results: The soy-fortified wheat which was developed is currently being distributed on a large scale through the Food for Peace program and a project for disseminating the new technologies has been developed. (931-17-560-481).

1967-71 Lysine Enrichment of Wheat Flour — British-American Hospital, Lima, Peru. Evaluation of the nutritional effects of adding lysine to wheat. Clinical studies were conducted in metabolic ward on infants to determine its usefulness in maintaining child growth. (931-17-560-483).

1967-71 Effects of Extrusion-Processing Variables on the Nutritional Quality of Inexpensive High-Protein Food Mixtures — University of California at Davis (Chile): Research into the effects of extrusion processing on foods utilized in food mixes for feeding pre-school children and infants in Chile. (931-17-560-482).

1968-75 Nutritional Improvement of Rice by Fortification with Synthetic Amino Acids and Vitamins — Harvard University (Thailand): Evaluation of nutritional impact of fortifying rice with lysine and threonine to improve protein values. (931-17-560-492).

1969-70 A Practical Approach to the Lysine and Tryptophan Supplementation of Lime-treated corn used in Central American Countries — Rutgers University/INCAP: Laboratory studies to determine feasibility of adding amino acids to lime-treated corn. (931-17-560-500).

1970-76 Relation of Dietary Calorie Intake to Protein Utilization — M.I.T.: Research into protein-calorie relationships and attempt to learn whether protein supplementation is effective without increased calorie ingestion, especially as this relates to LDC populations. (931-17-560-519).

1970-75 Development of Coconut Protein and Foods — Texas A&M (Philippines): Research into development of protein concentrates from coconuts using an aqueous extraction procedure and its subsequent utilization in blended foods. (931-17-560-522)

1971-75 Corn Fortification with Amino Acids in Human Populations — PAHO/INCAP: Evaluation of the nutritional improvement obtained in a Guatemalan community by fortification of corn during the milling process, with special reference to improvement in the nutrition of pre-school children and pregnant and nursing mothers in a rural area. (931-11-560-544).

1971-76 Influence of Maternal Diet on Offspring: Growth, Behavior, Food Efficiency and Susceptibility to Infection — Johns Hopkins University (Taiwan): Evaluation of the effect of adding a protein supplement to the diets of pregnant and lactating women on birth weight of infants and their subsequent physical and mental development. (931-11-560-530).

1972-75 Clinical and Sub-Clinical Malnutrition Related to Capacity of Work — Medical College of Wisconsin (Colombia): Determination in clinical and field studies of relationship between different degrees of malnutrition and work capacity. (931-11-560-529).

1972-76 Effects of Environmental Enrichment on Subsequent Development of Malnourished Children — Columbia University. A comparison of Korean children, previously malnourished, and normal Korean children, all adopted by middle class American families; further comparisons with their U.S. siblings to determine whether severely malnourished children can recover physically and mentally if placed in an enriched environment early in life. (Two projects). Results indicate that children adopted before 3 years of age "caught up" in achievement and growth; after 3 years of age, results were less positive. (931-17-560-550).

1974-76 Alternative Approaches to Controlling Vitamin A Deficiency — Cornell University (Philippines): Community-based study relating to Vitamin A deficiencies and cost/effectiveness of various interventions (two projects). Fortification of MSG, widely used in Asian cultures, with Vitamin A appears promising and is being evaluated for possible nationwide program. (931-11-560-0045)

1975-76 Health and Nutrition Household Surveys /Water Supply — Bureau of Census (Brazil): To develop a methodology for determining the effect of introduction of a community water supply on health and nutrition. (931-17-560-592).

1975-78 Influence of Maternal Nutrition on Infant Mortality and Morbidity — PAHO/INCAP: To study the effect of food supplementation during pregnancy and lactation on child growth, morbidity and mortality within the first year of life. (931-17-560-0611)

1975-77 Methodology for Diagnosing causes of Malnutrition at the Community Level (Community Level Interventions) — Fundacion para la Educacion Superior, Cali, Colombia: Research into causes of malnutrition and development of a methodology showing various types of community interventions that can be successfully implemented by public authorities, Voluntary Agencies and other concerned institutions within existing cultural, ecological and socio-economic constraints that characterize the community. (931-17-560-058).

1976-77 Development of a Diagnostic Test for Early Stages of Vitamin A Depletion — M I T.: Preliminary research to determine feasibility of developing a biochemical diagnostic test for early stages of Vitamin A deficiency. (931-17-560-998)

1976-78 Development of Foods for Infants and Pre-School Children based upon indigenous sources other than soybeans — University of Rhode Island/ University of Chile: Research into development of weaning foods utilizing extrusion technology from indigenous sources other than soybeans, for use in Chile. (931-17-560-0615)

1976-79 Effect of Protein-Calorie Interventions on Human Growth: PAHO/INCAP: Longitudinal studies in rural Guatemalan villages to determine the nutritional effect on children of adding calories, proteins or more food to the family diet. (931-0625.14)

1976-79 Fortification of Sugar with Iron EDTA — PAHO/INCAP (Guatemala). Evaluation of the technical and economic feasibility of fortifying sugar with iron as a way of combatting iron deficiency anemia. (931-0227.14)

1978-79 Functional Significance of Marginal Nutrient Deficiencies — Planning Phase, University of California (Berkeley): To organize a systematic approach to selecting and defining for research support specific activities within physiological and behavioral function areas as they relate to marginal nutrient intakes.

1976- Miscellaneous small research projects with varied contractors, such as (1)Evaluation of Nutrition Intervention Studies on Mortality and Morbidity with Johns Hopkins (Jamaica & India); (2) Determination of Protein Quality of New Varieties of Rice and Nutritional Impact on Pre-School Children with IRRI in the Phillipines, (3) Development of New Techniques for Assessment of Nutritional Status with Medical College of Wisconsin (Colombia). Feasibility of utilization of Fish Protein by Wet Reduction of Fish Meal, Idmon, Inc. Boston, (Thailand).(931-11-560-999)

1975-77 Evaluation of Sugar Fortification with Vitamin A, PAHO/INCAP (Guatemala & El Salvador); Determine Biological effectiveness of Vitamin A-fortified sugar in communities; determine cost effectiveness of fortification and monitor quality control in manufacture and distribution. (931-0045.14)

1976-79 Characterization of Vitamin A Deficiency and Design of Effective Intervention (Indonesia) — Helen Keller International: Define etiology of Vitamin A deficiency in Indonesian villages; through clinical studies, characterize the nature of corneal disease and keratomalacia, assess the effectiveness of massive doses of Vitamin A in reducing the incidence of keratomalacia, conduct nationwide Vitamin A survey. (931-0045.14)

1974-79 Development of Vitamin A Delivery Systems: International Vitamin A Consultative Group (IVACG)-Nutrition Foundation, Secretariat: Guidance to developing countries and donors in instituting Vitamin A operational and research programs. (931-0023.14)

1966-75, 1976-79 Clinical Assay of High Protein Foods (Institute of Nutritional Investigation) The project's purpose is to provide A.I.D. with clinical assay service for evaluating the nutritional merits of newly derived varieties of cereals and legumes and new low-cost food preparations. (930-0077.14)

1976-79 Combatting Iron Deficiency Anemia: International Nutritional Anemia Consultative Group, Nutrition Foundation: To guide international activities aimed at reducing nutritional anemia in the world. The group offers consultation and guidance to various operating and donor agencies who are seeking to reduce iron deficiency and other nutritionally preventable anemias. (931-0027.14)

1978-80 Soybean Utilization, University of North Carolina — Bolivia To develop a methodology for introducing soybeans directly into the home for human consumption. (931-0225.14)

1977-80 Improving the Nutritive Value of Wheat, Western Region Research Center — Bolivia: To introduce new technologies developed there to LDCs on a regional or country basis. (931-0231.14)

1976-80 Development of New Nutrition and Diet Survey/Surveillance Methodologies, Center for Disease Control and UCLA. To develop methodologies and conduct national nutrition surveys which define and analyze malnutrition problems utilizing these new methodologies; coincidentally to train LDC personnel in these procedures. The method has been applied in several LDCs including Nepal, Sri Lanka, Lesotho and Togo. Results provide a measure of the magnitude and distribution of malnutrition and a baseline for evaluating subsequent interventions. (931-1064)

B. ANALYSIS, PLANNING, EVALUATION

1970-74 Survey on the Economics of Malnutrition I — Battelle Memorial Institute and American Technical Assistance Corporation (ATAC). Survey of existing literature on this subject and evaluation of other social investment programs in order to develop a framework for an analysis of the costs of malnutrition in comparison to the benefits of prevention. The results of the survey and the proposed study procedure for subsequent phases were made available to prospective bidders and a meeting held to clarify goals. ATAC was selected to conduct studies in selected areas to determine the cost of malnutrition in terms of government and other out-of-pocket outlays for treatment as well as cost calculations for decreased productivity, reduced physical and mental performance levels. A regional nutrition conference was held in Florida in 1971, on "Nutrition for countries of the Western Hemisphere." LDC representatives, AID staff and outside consultants met jointly to discuss key problem areas requiring action and debate the research and operations projects which should be undertaken to address these problems.

1972 Economics of Malnutrition II (Battelle Memorial Institute and ATAC) Summary of Methodology developed by ATAC as the basis for a country study (Ecuador). A mini-conference on the economics of malnutrition was held. The types of tools to bear on this aspect, the analysis of various systems and the over-all costs of malnutrition and predicted benefits from its elimination were subjects of the conference. A workshop on "Nutrition and National Planning" was held in October 1972 for individuals involved with national development planning in Asia, Africa and Latin America. (This project has now evolved into "Analysis and Planning" project) (931-11-560-885)

1973-74 Extension of Methods of Incorporating Nutrition into Sector Planning (Community Systems Foundation): Systems analysis approach to nutrition planning in various countries and assessment of methodologies for incorporating nutrition into multi-sectoral planning (931-17-560-571)

1974 Nutrition and National Planning (211d grant — M.I.T.): To meet an increasing need for U. S. universities to provide capacity to train nutrition planners, conduct research and offer technical assistance in nutrition and national planning mainly through training of personnel. In 1974 a four-week training course in Nutrition Planning was held for 15 key LDC policy-level planners, and four other courses were held thereafter. Under this grant M.I.T. also provided technical assistance in multi-sectoral nutrition planning to the government of Pakistan. (931-560-0160)

1974-77, 1977-79 Analysis and National Planning (Various Contractors): To promote the incorporation of nutrition factors into LDC development plans, strategies and programs including the development of least-cost methodologies and techniques, increased LDC reliance on trained and competent local personnel, development of an international network linking LDC and other nutrition planners and strategists for exchange of information and experience, and identification of areas of mutual development concern for nutrition-related research. In 1975, under a New Trans-Century Foundation contract, a group of seven intermediate-level nutrition planners was trained and then sent out to the field for two-year assignments to assist LDC nutrition planning units in Bolivia, Cameroon, Zambia, Indonesia, Dominican Republic, El Salvador and Tunisia. (931-0262.14)

C. Nutrition Education

1977 MCH Health and Nutrition Education Services (RSSA contractual arrangement with HEW): To secure technical expertise in nutrition education and child health. (931-11-560-006).

1968 Publication of several books and booklets (By RTAC) with translations into Spanish and French, in response to many requests from the field for nutrition education materials. Outstanding publications were handbook on "Child Nutrition in Developing Countries" and "Child's Health and Weight Record" (almost a million copies for wide distribution, especially in Africa).

1973-75, 1974-77 New Approaches — Mass Media, Manoff Associates: To determine the feasibility of using mass media (radio) to motivate large numbers of individuals in rural and urban areas to improve their food behavior. This project looked into one technique, the "reach and frequency" technique, and was tested in the Phillipines and Nicaragua. (931-11-0993))

1970-74 Evaluation of Nutrition Education (University of Iowa): In-depth review of the literature, reports and experience to determine the effectiveness of nutrition education in altering dietary habits and improving nutrition (931-11-560-872).

1972-74, 1974-78 Evaluation of Nutrition Education (Synthetics Corporation) As Follow-up to Phase I of this project (Iowa State University): Development of methodology, field guide and protocol for evaluation (in Brazil and the Phillipines). Conference of experts was held to review and refine the methodology, and a pilot study carried out in one or more countries to evaluate the effectiveness of the methodology. This project also included a sector on evaluation of growth charts as educational tool in Ghana and Lesotho. (931-11-560-0872)

1974-78 New Approaches Mass Media (Synectics Corporation): Use of radio integrated with one-to-one communication, in Tunisia. (931-0993)

D. Improving the Nutrition-Planning Capabilities of the Voluntary Agencies

1969-73 Incentive Grants: Small one-time grants to encourage Voluntary Agency efforts to improve nutrition in LDCs, primarily through nutrition education and improved methods of child feeding; also to encourage increased host government involvement in promoting good nutrition. 29 grants made in 20 countries through 6 Volags. (931-11-560-0023) .

Among these were:

(1) **Integration of Vitamin A into Health Services in Haiti — (Helen Keller International (Haiti).**

Integration of distribution of high-potency Vitamin A capsules for malnourished children into public health services and supplemental feeding program; development of mechanisms for distribution; nutrition education on detection and prevention of Vitamin A deficiency, and evaluation.

(2) Post Harvest Grain Losses — (American Association of Cereal Chemists/(LIFE) — in Central America and Africa: Development of methodology and manual for assessing post-harvest grain losses. Pilot studies to evaluate methodology were conducted in Central America and Africa.

(3) Improved Infant Feeding and Weaning Practices — (Human Lactation Center): To ascertain the state of the art, a health/nutrition survey was carried out on infant feeding, breastfeeding and weaning practices; a miniconference was held to develop recommendations based on anthropological studies on infant feeding and weaning practices

(4) Two Seminars, training and Evaluation — (Foundation for Peoples of the South Pacific): To improve the nutrition planning capabilities of island leaders in South Pacific islands.

(5) Conversion of Food Wastes to Food Products — (Institute of Chemical Engineers): Evaluation studies and reports completed for 12 countries regarding capability of local entrepreneurs and availability of adequate facilities to convert food wastes to nutrients for human and animal consumption.

(6) Use of Food Technology to Overcome Malnutrition — (Institute of Food Technologists) Latin America: Identification of actions which can be taken by LDC governments in Latin America and donors to apply food technology resources to solution of nutrition problems in the vulnerable groups. An inventory of food technology institutions and their programs was prepared.

(7) Improving Nutrition Through School Feeding — (American School Food Service Association): Development of recommendations for the incorporation of nutrition considerations into school feeding programs internationally.

(8) Workshop on Reaching the Pre-School Child (ASFSA) — Groups from 15 LDCs were given opportunity to observe U.S. preschool feeding programs and to learn from each other's experience through work sessions, thus providing a new perspective for LDC officials and through group interaction develop insights of general application.

- (9) Integration of Nutrition into Community Development — (Save the Children Foundation/Community Development Foundation):** Incorporation of nutrition and health elements into ongoing community development activities in four countries: Upper Volta, Bangladesh, Honduras, and Indonesia. Under consideration are projects in Cameroon, Yemen, and the Dominican Republic.
- (10) Regional Nutrition Planning Workshops — (CARE/CRS).** Upgrading nutrition planning capabilities of CARE, CRS and related LDC personnel.
- (11) Evaluation of Pre-School Nutrition Programs (CARE):** Improving nutritional effectiveness of CARE pre-school programs.
- (12) Development of Effective Prototype Aids for the Detection and Prevention of Avitaminosis A (Helen Keller International):** Design, production and testing of visual and educational aids for adaptation to specific country situations, to be used by all levels of health and nutrition staff.
- (13) Analysis of Community Level Nutrition Programs — (Community Systems Foundation).** In Bangladesh, Indonesia, India, Colombia, Thailand, Chile, Haiti, Honduras: Identifying project success variables in community level nutrition and health projects.
- (14) Child Care Needs of LDC Women — (Overseas Education Fund of League of Women Voters):** Malaysia, Sri Lanka, Korea, Peru, Dominican Republic, Brazil. Literature search and field research to develop recommendations and models in LDCs for alternative child care systems which enhance the integration of women into the development process and provide adequate health/nutrition for children.
- (15) Nutrition Documents and Abstract System — (Community Systems Foundation):** To create a document and abstracts system to provide guidelines for nutrition planners, including distribution of a quarterly publication to selected recipients.
- (16) Beliefs and Practices which Affect Nutritional Status — (CARE):** A survey of beliefs and practices, world-wide, which have impact on food habits and consequently on nutritional status.

E. Workshops and Training

In addition to meetings on special subjects already mentioned, many workshops and training courses have also been given:

On nutrition and child feeding:

March 1968 (Dakar, Senegal)

May 1969 (Nairobi, Kenya)

May 1970 (Tunis, Tunisia)

Workshops on various aspects of food technology, on breeding and fortification, on wheat fortification, on packaging as well as on health related aspects such as nutrition/infection malabsorption.

On Multi-Sectoral Nutrition Planning:

(1) A series of six at M.I.T. in Boston, starting with one in 1971 and then five between 1973 and 1975.

(2) Two at Meharry Medical College in 1975 and 1976, for African nutrition planners, as well as one in Dakar in 1976 and one in Liberia in 1978. A final workshop in this series is being planned for Nashville during July 1978.

(3) One in Nairobi, Kenya, conducted by Cornell University and the Institute of International Development of that country, also for English-speaking African nutrition planners.

(4) A world-wide conference on Nutrition Policy Formation and National Planning was held at U.C. Berkeley, California, in March 1977 and was followed by a short workshop for LDC nutrition planners at nearby Asilomar Conference Center.

(5) An "on the job" training workshop for nutrition planners is currently under way in Manila, conducted by the National Nutrition Council of the Philippines, for participants from Asian countries, plus Peru & Jamaica

(6) Other workshops and training courses are in the planning and implementation stages (see last section this report on "future plans").

E. Other Activities

1967 Establishment of Scientific and Technical Committee at the National Academy of Science: To provide scientific and technical support to A.I.D. for combatting malnutrition and to assure the

maximum involvement of the private sector concerned with nutrition, food science and technology. The committee is composed of eminent representatives from the fields of nutrition and food technology. It responds to A.I.D. requests for guidance in such areas as food fortification projects, use of protein foods, policy for nutrition activities and additional specific areas (931-11-560-0799).

1967-70 Testing Acceptability of Fish Protein Concentrate — (University of California at Davis): A team of multi-disciplinary technicians evaluated the use and acceptance of Fish Protein Concentrate as a protein source for improving the diets of LDCs. Studies done in Brazil, Chile, Colombia and Thailand.

1968 Establishment of Scientific and Technical Nutrition Consortium — League for International Food Education (L.I.F.E.): An A.I.D.-financed consortium of nine scientific societies composed of the American Association of Cereal Chemists, American Chemical Society, American Institute of Nutrition, American Oil Chemists' Society, Institute of Food Technologists, Volunteers for International Technical Assistance, American Institute of Chemical Engineers, American Society of Agronomy, and American Institute of Agricultural Engineers. L.I.F.E. responds to inquiries from the field on technical matters and provides information on nutrition, food science and technology, food marketing, nutrition aspects of public health, clinical evaluation and related areas. It uses its roster of membership to provide or assist in recruiting experts for special assignments. It stimulates the interchange of ideas, information and program experiences. It services project requests through an information storage and retrieval system and publishes a monthly newsletter for some 3,500 recipients. L.I.F.E. also conducted a workshop with local food industries in November 1971 in the Far East; did research and sponsored another workshop in Ghana on food storage, packaging, breeding and fortification (Post-harvest losses). (931-11-560-0799)

1969-79 USDA Economic Research Division — RSSA (contractual arrangement) with Food Technology group: Provides technical services in food technology, to increase the availability of inexpensive foods of increased nutritional content, especially protein; assist in the development of

research and in-country programs to define the technical and economic aspects of fortifying food staples; encourage and assist private industry in producing and commercially marketing nutritious inexpensive protein foods in LDCs. (931-11-560-0831)

1969-72 Professional Exchange, travel grants, refresher training for top-level LDC nationals; This project was to foster closer relationships among the scientific communities and an exchange of the latest technical information on nutrition-related fields. In 1971, travel grants were provided for an International Conference on Nutrition, National Development and Planning at M.I.T. (931-11-560-834)

1970-73 Evaluation of Child Feeding Programs: American School Food Service Association (ASFSA) — To determine extent to which child feeding program objectives are being met and develop recommendations for improvement in order to devise better means of reaching the pre-school child. (931-11-560-883)

1971 Mini-conference of LDC and U.S. food firms to bring together the knowledgeable people in private food companies who have had a key role in producing low-cost high-protein foods. (931-11-560-921)

1971-72 Conference on Nutritional Improvement of Cereal Foods (Vail, Colorado) — A small number of selected experts in genetic breeding of cereals, joined by experts in the field of fortification, were brought together to discuss relative benefits and problems of their respective approaches to improvement of cereals used as basic commodities, such as wheat, corn, rice and cassava (931-11-560-911)

1971 Evaluation of corn-soy-milk (USDA) Evaluation of CSM, a product being distributed by Food for Peace (subcontracted to CARE — India and the Philippines.) (931-11-560-926)

1971-74 Nutritional Improvement of Cassava (University of Colorado): Support to projects for fortification of this basic commodity in Brazil and some African countries. (931-11-560-927)

1971-76 Evaluation of Supplementary Child Feeding Programs (Checchi and Co.) — Colombia, Kenya, Philippines: Attempts to develop a standard methodology for evaluation of child feeding programs to determine program effectiveness. Such evaluation techniques could be useful to governments, Volags and others engaged in child feeding. (931-11-560-0879)

1972-74 Nutritious Food Feasibility Grants to interest qualified commercial organizations in both the U.S. and LDCs in the local processing and marketing of low-cost nutritious foods for rural and urban consumption in protein-deficient areas. (931-11-560-963)

1974-1978 Guidelines on pre-school interventions to produce guidelines and a manual describing costs, advantages and operating conditions of 6 types of nutrition interventions and their effectiveness in improving the nutritional status of the pre-school child (This contract originally granted to Resources Development Associates, was later cancelled and then awarded to The Harvard Institute of International Development). The manual should be of great assistance to LDCs and field organizations desiring to mount pre-school nutrition programs, by enabling them to examine the pros and cons of various interactions and then select the most appropriate one for their own use

Other A.I.D.-Funded Activities (Illustrative)

A. Latin America

(1) **Brazil** — Grants for a broad spectrum of multi-sectoral nutrition activities including cassava fortification, production of new foods, nutrition education, and planning assistance. These efforts led to the establishment of a national food and nutrition policy currently being implemented by the Brazilian government and also to the first World Bank loan for nutrition (\$19 million) including improving of conditions of small farmers; better care for pre-school children and pregnant and nursing women; linkages between nutrition and agricultural policy; development and production of low-cost nutritious foods; training of various categories of nutrition workers; nutrition and infection; and surveillance.

(2) **Bolivia** — National Nutrition Improvement grants, leading to a loan (\$4 million) — to develop an integrated low-cost health delivery system which will extend elementary health services (maternal/child health, family planning, nutrition, environmental sanitation) to low-income groups in Bolivia, at a cost the government can afford.

(3) **Chile** — Nutrition Development Loan (\$5 million) to institutionalize the nutrition planning process in Chile by (a) development of a planning information system within the National Council of Food and Nutrition, (b) pilot projects in food production and processing, distribution, nutrition education and development of new technologies, (c) improvement of local water supplies through chlorination. Also a child nutrition project to assist U.S. volags and private counterpart agencies to broaden their participation in child nutrition activities and to better direct the PL 480 Title II inputs to the most vulnerable groups.

(4) **Colombia** — Nutrition Loan (\$6 million) to initiate a multi-year nutrition program that will improve the nutritional status of the rural and urban poor with special emphasis on meeting the nutritional needs of pre-school age children, also to develop an intersectoral nutrition planning process.

- (5) **Costa Rica — Nutrition Loan (\$6 million)** to improve the nutritional status of the most vulnerable groups including school-age children via maintenance of national child feeding programs, nutrition education, and MCH programs; to develop a national nutrition planning process.
- (6) **Dominican Republic — Health Loan (\$.8 million)** to improve the health status of at-risk groups by developing a comprehensive program which provides for a) low-cost health delivery system for the urban and rural poor, b) improvement of nutrition; c) expanded population services; d) environmental control of disease; e) key health administrative and management improvement.
- (7) **El Salvador — Nutrition Improvement grant**, currently developing national nutrition program.
- (8) **Haiti — Rural Community Development grant —** to assist the Government of Haiti, thru an intermediary organization HACHO, to deliver development services at the community level which include: a) preventive medicine, family planning and nutrition education; b) soil conservation, small irrigation systems and improved practices in agriculture; c) potable water and food storage facilities in the community. A larger multisectoral nutrition improvement grant is currently being developed.
- (9) **Honduras — Nutrition Loan (\$4 million)** is being developed, to establish a comprehensive nutrition program which would include community, regional and national level interventions in environmental sanitation, maternal/child health program, family planning, nutrition and health education, improved food delivery system, and develop a national nutrition planning capability.
- (10) **Nicaragua — Nutrition Delivery System Loan** (in process of development) to establish an effective semi-autonomous National Nutrition Institute which through social research, lab research, product development, nutrition education, mass media campaigns to modify diet patterns, improved food technology and distribution will help reduce existing malnourishment of the urban and rural poor.

(11) Panama — Rural Community Health and Nutrition (\$3.8 million) to improve the health in rural communities by developing and implementing local programs in environmental sanitation, maternal/child health care and adult medicine, nutrition and health education and food production improvement.

(12) Paraguay — A small Nutrition and Population grant was made within the scope of overall rural development.

(13) Peru — Technical Support (grant) to establish a nutrition-planning group within the Ministry of Agriculture which can coordinate its activities with other government agencies and analyze alternative intervention programs designed to improve the nutritional status of priority target groups.

(14) In addition to these country programs, the Latin American Bureau also has Regional Programs (through ROCAP) for Central America and with the Caribbean Food and Nutrition Institute for the Caribbean area. Other projects are also being developed in Guyana and Jamaica.

B. Near East-South Asia area:

(1) Morocco — Nutrition Planning grant to identify and implement intervention schemes which will increase nutritional intake of priority target groups (infants, pre-school children, pregnant and nursing mothers) and increase the availability of nutritionally improved food for the lowest income segments of the Moroccan population, also to initiate inter-sectoral nutrition planning.

(2) Pakistan — (a) Nutrition Planning and Research grant to provide assistance to the Pakistan National Planning Commission to begin planning, research, and training activities leading to a comprehensive national policy and program.

(b) To establish a program of Vitamin A fortification of tea, which will help reduce the incidence of nutritionally-caused blindness among Pakistan's rural and urban poor. Pakistan

(c) Atta fortification program to improve the nutritional status of the rural and urban poor by fortification of atta (wheat flour) with lysine.

(3) Tunisia — (a) With the assistance of Harvard University, a nutrition institute was established in May 1969 for nutrition planning and coordination, applied nutrition, nutrition education, and food technology.

(b) A nutrition planning project was developed to identify, select, integrate and implement/evaluate cost-effective alternative solutions to malnutrition problems across major sectors.

(c) With the assistance of the Nutrition Institute, a project was undertaken to implement under village conditions a large-scale trial to determine the nutritional benefits which can be derived from the fortification of wheat products with lysine.

(4) India — Nutritional Foods Development (Sidney M. Cantor Associates): To reduce malnutrition through improvement in the quality of the Indian diet, A.I.D. provided technical assistance to the Indian Government and the Protein Foods Association (private sector) to fortify foods with protein, vitamin and mineral supplements; to reformulate foods in the child feeding programs to improve their acceptability and nutritional value, and to create more nutritious commercial foods; to support nutrition research and educational projects, and to formulate national nutrition policies and strategies on matters of agricultural production and food pricing and marketing. Endeavors have included fortification of atta, salt fortification, production of Bal Ahar for infant and school feeding; survey in Tamil Nadu of agricultural production patterns, distribution problems, dietary customs, and other factors which play an important part in nutrition to create a model for nutrition planning; also research on Vitamin A fortification of tea and protein-enriched tapioca.

C. East Asia:

(1) Philippines — Food and Nutrition grants and technical assistance have assisted the Philippines to establish and support a comprehensive national nutrition program to reduce malnutrition among at-risk group via improved nutrition planning, more efficient child-feeding programs, nutrition education programs for mothers and school children and research to develop indigenous sources of improved foods. The program reaches 9 provinces and 36 barrio feeding centers. It is one of the world's most dynamic nutrition programs.

(2) Thailand & Indonesia — Currently developing national nutrition programs. AID/W is providing technical assistance.

D. Africa

(1) Ghana — Development of Interventions for Nutritional Improvement (grant) to demonstrate the effectiveness of inter-sectoral planning in the improvement of nutritional status and the conditions under which certain interventions are effective in improvement of nutritional status for low-income groups.

(2) Zaire — Nutritional Improvement program, to better the nutrition of infants, pre-school children and pregnant women through assistance to government agencies in researching protein supplements and fortification of foods and applying these research results in rural and urban pilot projects.

IV

Future Plans

New directives for FY 79 concentrate on a few major categories of initiatives:

(a) To determine and improve the nutrition/consumption effects of development policies, particularly those in the agricultural sector, and to sensitize agricultural policy-makers and technicians to the importance of incorporating nutrition considerations into agricultural policies; to investigate the economic and political feasibility of using subsidized consumption systems to achieve nutrition objectives and to evaluate their cost/effectiveness, the pre-conditions under which they might be effective, and their replicability; to determine the forms of subsidized consumption programs most appropriate for particular sets of pre-conditions and particular objectives. A secondary objective is to influence U. S., international organizations and LDC positions on such programs. Methodologies will be developed and tested in selected LDCs to determine whether the analytical capabilities required for their application are available, and their usefulness to planners and decision-makers. A RSSA with an Agricultural Economics group of USDA handles this program. Operational research will be conducted in a number of LDCs [Note. A new research project for 1978-81, Introducing Nutritional Considerations into Agricultural Research Centers, with subprojects in Taiwan, the Philippines, Peru, Colombia, and Guatemala will also contribute greatly to this objective.]

(b) (RSSA (Contractual arrangement) with Office of International Health): To assist missions and LDC governments in the design and implementation of incorporating meaningful nutrition components of health delivery systems to address the critical malnutrition problem of children under the age of three (most existing "preschool" systems reach only children over three) and pregnant and lactating women.* The primary elements are. Identification of children nutritionally "at risk" (rather than waiting until these children are second or third degree malnourished), principally through periodic weighing; highly-focused nutrition education addressing major deleterious belief patterns particularly those related to weaning practices, diarrhea, breast feeding, and the food intake of pregnant and nursing women, supplementary feeding, particularly in cases where real income is the primary constraint and where education alone is inadequate.

(c) Training for A.I.D. personnel as well as LDC technicians involved in health, agriculture and rural development programs in LDCs to enable them to incorporate nutrition interventions into the health delivery systems, agricultural planning and rural development programs being introduced in LDCs and to promote village level participation.

(d) Nutrition education on child feeding in general and with emphasis on breastfeeding and weaning practices. Increased attention will be paid to the behavioral sciences as essential to inducing behavioral change and to integrated programs utilizing mass media with other forms of

* It should be noted that the development of nutrition components of integrated services designed to meet the basic needs of the poor is consistent with and supportive of population program objectives. Evidence in a number of countries (Korea, Taiwan, Sri Lanka, and in the South Indian state of Kerala) indicate the possibility that meeting basic needs through the broad provision of health, education, food and nutrition services not only has improved human well-being but also may have permitted a significant reduction in the rate of population growth, this despite the fact that improved maternal nutrition and improved weaning practices might be expected to lead to a decrease in infant and child mortality and a resulting short-term increase in population growth

communication. A substantial body of knowledge is now available in this area which can be disseminated to the field and incorporated into LDC programs. An assessment conducted by DS/EHR at the request of DSB to identify additional research needs in nutrition education is currently under way.

(e) Changing Maternal and Weaning Dietary Practices: A project to develop and test methodologies for influencing breast-feeding and other maternal weaning behavior. The project will also develop and field test methodologies for utilizing mass media and modern advertising and educational methods to modify nutrition-related behavior in large numbers of people. (931-1010)⁴

A.I.D. efforts will continue in the areas of:

- (1) Food and nutrition technical services, to provide assistance to AID overseas missions and to develop new technologies and products that can be utilized in LDCs based principally upon appropriate village-level technologies. A new major component will be improving post-harvest storage facilities, simpler and improved food preservation methods and better food preparation. (931-0831)
- (2) Direct assistance to countries in surveys and surveillance methodologies. (931-0262)
- (3) Vitamin A and iron supplementation
- (4) Training of LDC personnel for multi-sectoral nutrition planning, with increased emphasis on skill building
- (5) Evaluation of nutrition projects currently underway with A.I.D. support
- (6) Research will be extended to include:
 - (a) **Determining Nutritional Requirements**, which involves a set of research activities designed to increase understanding of complex nutritional issues essential to assist nutrition planners establish a more meaningful order of priorities with respect to nutrients and target groups.

(b) Functional Implications of Malnutrition

(Nutrition recommendation No. 1 of the National Academy of Sciences World Food and Nutrition Study team), which could provide a much stronger empirical base for nutrition program targeting.

(c) The Effect of Maternal Diet on Offspring, which is concerned with the effects of food supplements on the birth weights of babies as well as the infants' development during the first year of life. The results of this study could influence the target of food distribution programs. (931-17-560-0530)

(6) Nutrition analysis and planning will continue to be emphasized. Projects in this area are designed to assist LDCs in actions that must be taken at either the national or community level to diagnose the causes of malnutrition, to assess the effects of other development activities on nutrition, to assess alternative means of addressing these problems and determinants, and to prepare manpower at all levels to carry on these activities. The strategy adopted is to provide direct technical assistance as required for field support; and provide training for development of analysis and planning as well as implementation of nutrition programs among both A.I.D. staff and LDC personnel. Prior training programs have been evaluated and results fed-back for design of future training programs. Special analyses, reports and new planning methodologies will be incorporated into training workshops and courses. Conferences will be held to exchange information among LDC planners and programmers, including assessment of training needs and development of methodologies. New orientation in training. Training to be held to extent possible in LDCs, by regions, in language of area if feasible, third-country in-service training will be utilized where special capability exists; skill building using non-formal education methods will be stressed.

Workshops currently being planned or implemented are on Multi-sectoral Nutrition planning for the countries of the Sahel (in Ouagadougou, Upper Volta, in French, mid-1978), Quantitative Analysis methodologies applied to nutrition planning, for Latin American countries (in Honduras, in Spanish, October 1978), Nutrition Education/mass-media (also for countries of Latin America and Africa, early 1979). For A I D. staff, plans are being developed for in-service training on nutrition considerations for agricultural technicians and on nutrition/health planning (short and long-term).

An assessment of LDC training needs in the Latin American countries is underway for presentation and discussion at a meeting of the LDC Nutrition Planners Forum to be held in conjunction with the XI International Congress of Nutrition Societies at Rio de Janeiro, Brazil, in August of 1978.